AMENDMENTS TO THE SPECIFICATION

In then related PCT Publication specification, please amend the Subtitle beginning on page 1 line 2 as follows:

Background of the Invention

1. ~~Technical~~ Field of the Invention

In then related PCT Publication specification, please amend the Subtitle beginning on page 2, line 1 as follows:

2. Description of the Related~~Background~~ Art

In then related PCT Publication specification, please amend the paragraph beginning on page 3, line 20 as follows:

The solution of the invention is specified by the features of ~~claim 1~~the claimed invention. According to the invention, the assembly for supporting the lateral beam comprises a pivoting mechanism for pivoting the lateral beam around a horizontal pivotal axis perpendicular to the transport direction and the grippers are rotatably movable for at least compensating a change of orientation of the work piece due to the pivoting of the lateral beam.

In then related PCT Publication specification, please amend the Subtitle beginning on page 13, line 4 as follows:

~~Preferred embodiments~~Detailed Description of the Invention

In then related PCT Publication specification, please amend the paragraph beginning on page 13, line 5 as follows:

~~The Figure~~Figure 1 shows a press line provided with a conveyor system according to the invention. The press line 1 includes four press stations 10, 20, 30, 40 that are consecutively arranged in a row. The distance between the centers of adjacent press stations amounts to about 5-6 m. Each of the press stations 10...40 features an upper die 11, 21, 31, 41 and a corresponding lower die 13, 23, 33, 43. The upper dies 11...41 are individually vertically movable by respective drives and gears arranged in housings 12, 22, 32, 42 arranged on top of the press stations 10...40. These mechanisms for moving the upper dies 11...41 are as such known in the field of press technology and are not shown in detail. The work pieces are formed in between the upper dies 11...41 and the lower dies 13...43. The upper dies 11...41 are mounted on press stands 14, 24, 34, 44, each of them comprising four posts arranged around the work spaces 15, 25, 35, 45 in between the dies 11...41, 13...43. The posts of the press stands 14...44 as well as the lower dies 13...43 may be individually supported, on individual press beds for each press or on a common press bed for the entire press line 1.

In then related PCT Publication specification, please amend the paragraph beginning on page 13, line 19 as follows:

In between two consecutive press stations 10...40 conveyors 52, 53, 54 are arranged. Further conveyors 51, 55 are arranged before the first press station 10 and after the last press station 40. The first conveyor 51 is arranged in front of the first press station 10 for feeding the press line 1 by raw work pieces from a feeding station (not displayed). The second conveyor 52 is arranged in between the press stands 14, 24 of the first press station 10 and the second press station 20, the ~~second~~ third conveyor 53 is arranged in between the press stands 24, 34 of the second press station 20 and the third press station 30, and the ~~third~~ fourth conveyor 54 is arranged in between the press stands 34, 44 of the third press station 30 and the fourth press station 40. The last (fifth) conveyor 55 is arranged after the last press station 40 for removing the formed work piece from the press line 1 and feeding it to a final station, such as a final delivery stack or

a conveyor, carrying away the formed work pieces. Each of the conveyors 51...55 is individually supported. In the displayed situation, all of the conveyors 51...55 are in the leftmost position, ready for accepting a work piece from the feeding station, respectively the press stations 10, 20, 30, 40 on their left sides.

In then related PCT Publication specification, please amend the paragraph beginning on page 14, line 5 as follows:

~~The Figure 2~~Figure 2 is a perspective view of a conveyor according to the invention. The conveyor 52 is built up by a first support assembly 100 arranged on one side of the press line, a second support assembly 200 arranged on the other side, across the press line, a first lateral beam 300 supported by the first support assembly 100 and a second lateral beam 400 supported by the second support assembly 200. A cross-bar 500 is attached to both the lateral beams 200, 400 and extends across the press line, perpendicular to the transport direction that coincides with the axis of the press line. The ~~conveyor 60~~conveyor 52 is dimensioned such that only its cross-bar 500 penetrates the work spaces 15, 25 of the presses. The support assemblies 100, 200 as well as the lateral beams 300, 400 are arranged laterally of the work spaces 15, 25. The range of the conveyor 52, i.e. the area where work pieces may be picked up or deposited, extends from the center of the first work space 15 to the center of the second work space 25. Accordingly, the range of the adjacent conveyor extends from the center of the second work space 25 to the center of the work space of the adjacent station. That way, each work piece arranged in one of the stations may be reached by the two adjacent conveyors.

In then related PCT Publication specification, please amend the paragraph beginning on page 14, line 20 as follows:

~~The Figures~~Figures 3-6 are different further views of the conveyor: The Figures 3-5 are stand-up views from the exterior and the interior side of a press and along the axis of the press, respectively; the Figure 6 is

a top-view of the conveyor. The support assembly 100 comprises two parallel vertical posts 101, 102 fixed in a distance by three horizontal plates: a base plate 103, an intermediate plate 104 and a top plate 105. The vertical posts 101, 102 have an I-shaped profile (see Fig. 2), its main extension being perpendicular to the axis of the press. The base plate 103 serves as a platform, thereby improving the stability of the support assembly 100. The top plate 105 carries two drives 106, 107, each of them coupled to one end of a vertical spindle 108, 109, arranged on the inner side of the support assembly 100. The other ends of the spindles 108, 109 are borne by bearings fixed to the intermediate plate 104. Furthermore, one of the vertical posts 102 carries a vertical guidance 110, extending parallel to the respective spindle 109, on the same inner side of the vertical post 102.

In then related PCT Publication specification, please amend the paragraph beginning on page 15, line 25 as follows:

The lateral beam 300 comprises a base part 310, a telescopic drive mechanism 320 and a carriage 330 to which one end of the cross-bar 500 is attached (cf. Fig. 2). ~~The base~~A base part 310 is constituted by a hollow section 311 attached to the couplings 301, 302. Two parallel rails 312, 313 are arranged on the inner face of the hollow section 311, extending along the longitudinal extension of the base part 310.

In then related PCT Publication specification, please amend the paragraph beginning on page 16, line 1 as follows:

~~The telescopic~~Telescopic drive mechanism 320 is arranged on the inside of the base part 310 and guided on these rails 312, 313. The drive mechanism 320 comprises an intermediate carriage 321 having rollers at both ends over which two belts 322, 323 are guided around the intermediate carriage 321, along its longitudinal extension. The main extension of the intermediate carriage 321 is slightly longer than half the length of the base part 310 of the lateral beam 300. On its inner face, the intermediate carriage 321

comprises a pair of parallel rails 324, 325 for slidably guiding the carriage 330

In then related PCT Publication specification, please amend the paragraph beginning on page 16, line 16 as follows:

~~The Figures~~Figures 2-6 show the carriage 330 in its leftmost position. The intermediate carriage 321 together with the carriage 330 are salient with respect to the base part 310 of the longitudinal beam 300. The length of the lateral beam 300 corresponds to the distance of adjacent press stations, i.e. 5-6 m, reduced by the excess length of the telescopic drive mechanism 320. This allows for positioning adjacent conveyors in a press line or multiple die press such that both conveyors may reach the same intermediate position where the work piece is to be deposited or to be picked up, without interference between the lateral beams of the conveyors. Namely, the protruding portion of the intermediate carriage 321 penetrates the interspace between two adjacent lateral beams exclusively during the pickup or deposition of a work piece. Otherwise, the base part 310 leaves enough room for pivoting the lateral beams and for positioning the cross-bar of the adjacent conveyor in the interspace between the beams.

In then related PCT Publication specification, please amend the paragraph beginning on page 17, line 20 as follows:

~~The Figure~~Figure 7 shows a detailed view of the telescopic drive mechanism of the conveyor. The telescopic drive mechanism 320 is a part of the lateral beam 300 which is attached by means of a coupling 301 to the spindle 108 borne at its lower end on the intermediate plate 104 of the support assembly 100. The coupling 301 comprises a rotary plate with a pivot bearing for adjusting the orientation of the coupling 301 attached to the lateral beam 300 relative to the vertical thread coupled to the spindle 108. The coupling 301 further comprises a compensating mechanism 303 constituted by a horizontal rail attached to the base part 310 of the lateral beam 300 and a corresponding guidance

attached to the coupling 301. The compensating mechanism 303 allows for compensating the varying distance between the support points of the couplings on the spindles.

In then related PCT Publication specification, please amend the paragraph beginning on page 18, line 23 as follows:

~~The Figures~~Figures 8A-F are a schematic illustration of the inventive process. ~~The Figure~~Figure 8A shows the cross-bar 500 in its rightmost position; the lateral beam 300 is inclined such that the cross-bar 500 is lowered relative to the center of the lateral beam 300. Typically, the maximum lift range needed is about 30 cm or less, which means that the maximum inclination angle relative to a horizontal plane is about 6° or less. In the inclined position, picking up of a work piece 2 positioned in the first station 10 is accomplished by providing a negative pressure to the suction tools of the cross-bar 500. As soon as the work piece 2 is picked up, the right spindle 107 of the support assembly 100 is operated to pivot the lateral beam 300, such that it reaches its horizontal position. Thereby, the work piece 2 is lifted up from the first station 10. During the pivoting motion, as soon as the work piece 2 is released from the first station 10, the horizontal movement of the carriage 330 holding the cross-bar 500 starts. This allows for rapidly removing the cross-bar 500 from the work space in between the upper and the lower die and therefore for maximizing the efficiency of the process performed by the press line. During the lifting process, the cross-bar 500 is rotated in order to compensate the relative orientation of the cross-bar 500 with respect to the carriage 330. Therefore, the orientation of the work piece 2 remains constant.

In then related PCT Publication specification, please amend the paragraph beginning on page 20, line 17 as follows:

~~The Figure~~Figure 9 is a schematic illustration of the hand-over of a work piece among two adjacent conveyors 52, 52', in order to flip the work piece. For performing the hand-over the cross-bar 500

holding the work piece is rotated about 90°, such that the work piece 2 is held upright. Following this, the carriages 330, 330' of the two adjacent conveyors 52, 52' are moved near to its neighboring outermost positions, depending on the width of the work piece 2. At the same time, the cross-bar 500' of the second conveyor 52' is rotated such that its grippers face the grippers of the other cross-bar 500 of the first conveyor 52. It is in this position that the hand-over is enabled: For a short moment, the work piece 2 is held from both sides, until the first conveyor 52 disengages from the work piece 2 and removes the cross-bar 500. By rotating the cross bar 500' of the second conveyor 52', the work piece 2 is again oriented such that it may be introduced into e. g. a press station. However, due to the hand-over as displayed in Figure 9, the orientation of the work piece 2 has been flipped.

In then related PCT Publication specification, please amend the paragraph beginning on page 21, line 1 as follows:

~~The Figure~~Figure 10 is a perspective view of a conveyor according to the invention, having relocatable support assemblies. The conveyor 52a essentially corresponds to the conveyor 52 displayed in Figures 2-7. However, the support assemblies 100a, 200a of the conveyor 52a for supporting the lateral beams 300, 400 are modified such that they are relocatable in a direction transverse to the transport direction. For this purpose, the support assemblies 100a, 200a are supported on two parallel rails 601, 602 extending across the press, running underneath the lower die of the press. The rails 601, 602 extend end-to-end from one support assembly 100a to the other support assembly 200a, constituting a track 600 along which the support assemblies 100a, 200a may be relocated

In then related PCT Publication specification, please amend the paragraph beginning on page 22, line 6 as follows:

~~The Figures~~Figures 11A, B show top views of two positions of a further embodiment of a conveyor

according to the invention, having a telescopic drive mechanism featuring an additional linear guideway. Generally, the construction of the conveyor corresponds to that of the conveyor discussed in connection with Figs. 1-7. However, this further embodiment of the conveyor 52b features a lateral beam 300b having a base part 310b of a reduced length, compared to the embodiment discussed above. The length of the base part 310b just about corresponds to the length of the intermediate carriage 321b. In order to allow for a reliable support of the intermediate carriage 321 b on the base part 310b, a linear guideway 340b is provided in between the base part 310b and the intermediate carriage 321 b. The linear guideway 340b is slidably movable with respect to both its neighboring parts. Its length corresponds to about half the length of the intermediate carriage 321b.

In then related PCT Publication specification, please amend the paragraph beginning on page 22, line 28 as follows:

~~The Figure~~Figure 11A depicts the situation where the carriage 330b is in its central position. In that state, the intermediate carriage 321 b and the linear guideway 340b are as well in their central positions, i.e. symmetrical with respect to the center of the lateral beam 300b Because of the reduced length of the base part 310b the extension of the conveyor 52b along the press is reduced (cf. Figure 8C) which allows for untroubled machining of the work pieces in the adjacent presses.

In then related PCT Publication specification, please amend the paragraph beginning on page 23, line 4 as follows:

~~The Figure~~Figure 11B depicts the outermost position of the carriage 330b with respect to the lateral beam 300b. Almost half of the intermediate carriage 321 b longitudinally protrudes over the base part 310b of the lateral beam 300b. The linear guideway 340b has moved towards the respective end of the base part 310b and is still supporting the intermediate carriage 321 b along its entire length, partially

including the portion where the two drives 304.1 b, 304.2b cooperate with the intermediate carriage 321 b. Thereby, a stable support of the intermediate carriage 321 b is ensured, especially in the region where the drives 304.1 b, 304.2b exert moments and forces on the intermediate carriage 321 b. The path of the carriage 330b is apportioned to relative paths of the linear guideway 340b, the intermediate carriage 321 b and the carriage 330b with respect to their neighboring outer element at a ratio of 1 : 1 : 2, i.e. the absolute paths of the these elements are at a ratio of 1 :2:4.

In then related PCT Publication specification, please amend the paragraph beginning on page 23, line 16 as follows:

~~The Figure~~Figure 12 shows a detailed view of a first implementation of the additional linear guideway. Again, the rotary movement of the drive 304.1 b attached to the back side of the base part 310b is transmitted to the intermediate carriage 321 b by means of a pinion 307b attached to a drive shaft 306b of the drive 304.1 b cooperating with a rack 308b fixed to and extending along the intermediate carriage 321 b. Two linear guideways 340.1 b, 340.2b are disposed one above the other, in between the base part 310b and the intermediate carriage 321 b. Each of the guideways 340.1 b, 340.2b cooperates with two parallel rails 312b, 326b; 313b, 327b attached to the base part 310b and the intermediate carriage 321 b, respectively. For this purpose, the guideways 340.1 b, 340.2b feature monorail bearings 341.1 b, 342.1 b; 341.2b, 342.2b that are known as such in the state of the art. For ensuring synchronous operation of the guideways 340.1 b, 340.2b, i.e. to make sure that the position of the guideways 340.1 b, 340.2b is always uniquely defined by the positions of the neighboring elements, the guideways 340.1 b, 340.2b each comprise a cogwheel 343.1 b, 343.2b that is freely rotatable around a vertical axis, i. e. an axis that is perpendicular to the plane defined by the parallel rails 312b, 326b; 313b, 327b. Each of the cogwheels 343.1 b, 343.2b cooperates with two opposed parallel cograils 314b, 328b; 315b, 329b that are parallel to the rails 312b, 326b; 313b, 327b and are fixed to the base part 310b and the intermediate carriage 321 b,

respectively.

In then related PCT Publication specification, please amend the paragraph beginning on page 25, line 1 as follows:

~~The Figure~~Figure 13 shows a detailed view of a second implementation of the additional linear guideway. In most of the aspects, its construction corresponds to those of the implementation discussed in connection with Figure 12. That is why in the following we concentrate on the differences. In order to reduce the overall width of the lateral beam the linear guideways 340.1c, 340.2c are of another type, featuring positive control cages 344.1c, 344.2c. Such guideways are commercially available (e. g. INA guideways MVZ of INASchaeffler KG or Schneeberger Formula-S guideways). They comprise two parallel rails 345.1c, 346.1c; 345.2c, 346.2c having V-shaped profiles enclosing the central cage 344.1c, 344.2c, which is slidably movable with respect to both the rails 345.1c, 346.1c; 345.2c, 346.2c. Positive control is effected by cogwheels that are rotatably mounted to the cage 344.1c, 344.2c and that cooperate with cograils fixed to the two rails 345.1c, 346.1c; 345.2c, 346.2c of the linear guideways 340.1c, 340.2c. In this implementation, the cage 344.1c, 344.2c effectively constitutes the first stage of the telescopic drive mechanism 320c whereas the rails 345.1c, 346.1c; 345.2c, 346.2c of the linear guide-ways 340.1c, 340.2c are fixed to the neighbouring elements, i. e. the base part 310c and the intermediate carriage 321c.